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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,373	08/08/2001	Koichi Kanno	396.40469X00	8927

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EXAMINER

NGUYEN, TAM M

ART UNIT PAPER NUMBER

1764

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,373

Applicant(s)

KANNO ET AL.

Examiner

Tam M. Nguyen

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1764

DETAILED ACTION

Response to Amendment

The rejection of claims 1, 6, and 8 under 35 USC § 102(b) anticipated by Matsumoto (JP-01-282346) is withdrawn by the examiner in view of the amendment filed on July 14, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 1764

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (JP-01-282346) in view of Mochida et al. (4,891,126) and Orac et al. (5,843,298).

Matsumoto discloses a process for producing a pitch composition by mixing a mesophase pitch with a coal tar pitch in a ratio of from 5/95 to 95/5. The mixed pitch is then heated (carbonization treatment) to a temperature of from 800 to 1700° C. The treated pitch of Matsumoto is graphitized at a temperature of from 1500° C to 2500° C. It is known that in carbonization treatment, coke is produced. The mixed pitch has an optically anisotropic content of at least 80 vol. %. This is deemed to anticipate the limitation of claims 1 and 8. (See page 3, lines 17-24; page 4, lines 25-32; page 5, line 27)

Claim 1:

Matsumoto does not disclose the step of producing the mesophase pitch as claimed.

Mochida discloses that a mesophase pitch is produced by polymerizing a condensed polycyclic hydrocarbon in the present of hydrogen fluoride-boron trifluoride. (See abstract; col. 5, line 49-52)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Matsumoto by producing a mesophase pitch as taught by Mochida because such method is effective to produce a mesophase pitch containing an optically anisotropic phase.

Claim 1:

Art Unit: 1764

Matsumoto does not specifically disclose that the coal tar pitch contains substantially no quinoline insolubles (QI).

Orac discloses a process for producing a coal tar pitch which contains substantially no quinoline insolubles. (See abstract)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Matsumoto by using the coal tar pitch from the process of Orac because, in the Matsumoto process, one of skill in the art would use any coal tar pitch including the pitch from the Orac process and with the expectation that the results would be the same or similar because of the similarities between the Matsumoto coal tar pitch and the Orac Pitch.

Claim 2:

The mesophase pitch has a softening point of 220-300° C. Since the Matsumoto mixed pitch is similar to the claimed pitch composition and the Matsumoto pitched is subjected to a carbonization treatment at a temperature 800 to 1700° C as claimed, it would be expected that the carbonization treatment of the Matsumoto pitch would have a carbonization yield of 70 % or higher. (page 4, lines 25-32)

Matsumoto does not specifically disclose that the softening point of the pitch is measured by an elevation flow tester method.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Matsumoto by using the claimed testing method because one of skill in the art would use any testing method because it would be

Art Unit: 1764

expected that any testing method including the claimed method would result in the reading of the softening point of the Matsumoto pitch in the range of 220-300° C.

Claims 5, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (JP-01-282346) in view of Mochida et al. (4,891,126), Orac et al. (5,843,298), and Hayner (6,153,004).

Matsumoto does not disclose the step of mixing 100 parts of the pitch composition with 0.1 to 100 parts of sulfur.

Hayner discloses that it is known to improve a pitch's properties by adding 6-14 wt.% of sulfur to the pitch. (See col. 2, line 66 through col. 3, line 7)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Matsumoto by adding sulfur to the pitch composition as taught by Hayner because adding sulfur to the pitch would increase viscosity and reduce the melting point of the pitch.

Claim 7, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (JP-01-282346) in view of Mochida et al. (4,891,126) and Orac et al. (5,843,298), and Ryu et al. (6,521,380).

Matsumoto does not specifically disclose that the carbonaceous material (coke) is pulverized before graphitizing.

Ryu discloses a process of graphitizing carbonaceous material wherein the carbonaceous material is pulverized before graphitizing. (See col. 3, lines 50-56)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Matsumoto by pulverizing the carbonaceous

Art Unit: 1764

material as taught by Ryu because one of skill in the art would pulverize the carbonaceous material before the graphitizing step because the pulverizing step of Ryu is effective to produce graphitized fiber to produce negative electrode.

Response to Amendment

The argument that the Japanese Patent (Matsumoto) does not teach or suggest the use of a mesophase pitch produced by polymerizing a condensed polycyclic hydrocarbon or a substance containing the condensed polycyclic hydrocarbon in the presence of hydrogen fluoride-boron trifluoride is not persuasive. The examiner replied upon Mochia to teach that a mesophase pitch can be produced by polymerizing a condensed polycyclic hydrocarbon in the presence of hydrogen fluoride-boron trifluoride (see abstract; col. 5, line 49-52). Matsumoto does not limit how the mesophase pitch is produced. Therefore, one of skill in the art would use a mesophase pitch from any process including from the Mochia process.

The argument that Matsumoto does not teach that the coal tar pitch contains substantially no quinoline insolubles (QI) is not persuasive. The examiner relied upon Orac to teach the availability of a coal tar pitch containing substantially no quinoline insolubles and Matsumoto does not limit the type of coal tar pitch. Therefore, one of skill in the art would use any coal tar pitch including the Orac coal tar pitch.

The argument that Matsumoto does not teach or suggest a step of mixing 0.1 to 100 part of sulfur per 100 parts of the pitch composition is not persuasive. One of skill in the art would add sulfur to the pitch of Matsumoto as taught by Hayner because adding sulfur to a pitch would increase viscosity and reduce the melting point of the pitch.

Art Unit: 1764

The argument that the applied references do not teach or suggest the step of graphitizing the coke produced at a temperature of 2000° C or higher is not persuasive. It is known that coke is produced in the carbonization treatment. Matsumoto discloses that the carbonized pitch is then graphitizing at a temperature of from 1700 to 2500° C.

The argument that Matsumoto does not teach or suggest a pitch composition or process as in the present claims is not persuasive. Matsumoto discloses a process of mixing a mesophase pitch and coal tar pitch as claimed. The mixed pitch is then heated (carbonization treatment) at a temperature of from 800 to 1700° C as claimed. The treated pitch of Matsumoto is graphitized at a temperature of from 1500° C to 2500° C as claimed. The modified process of Matsumoto is essentially the same as the claimed process in term of pitches and operating steps. It would be expected that the composition produced from the modified process of Matsumoto would be the same as the claimed composition.

The argument that Matsumoto teaches away from processing as in the present invention, including, inter alia, pulverizing the coke and graphitizing the pulverized coke is not persuasive. As discussed above, the modified process of Matsumoto teaches all the claimed limitations. The examiner further modified the process of Matsumoto by pulverizing the carbonaceous material (coke) before the graphitizing step because the pulverizing step of Ryu is effective to produce graphitized fiber to produce negative electrode. There is no evidence that Matsumoto teaches away from the claimed process.

The argument that Mochida teaches techniques for forming carbon fibers from a pitch and Mochida does not teach the process for producing coke as in the claimed invention is not persuasive. The examiner replied upon Mochia to teach that a mesophase pitch can be produced

Art Unit: 1764

by polymerizing a condensed polycyclic hydrocarbon. Moreover, Mochia also teaches that a pitch produced from a condensed polycyclic aromatic hydrocarbon can be converted to carbon or graphite.

The argument that Orac is concerned with production of graphite electrodes for the steel industry is not persuasive. Orac discloses a method of producing a pitch containing substantially no QI. One of skill in the art would use any coal tar pitch including the coal tar pitch of Orac because how the pitch, which contains substantially QI, is going to be used would not affect the process of Orac. (See col. 1, lines 5-10)

The argument that one of skill in the art concerned with the applied Matsumoto reference would not have looked to the teaching of Hyner is not persuasive because Hyner discloses that adding sulfur into a pitch would increase the value of the pitch (increase viscosity and reduce the melting point). The Matsumoto and Hyner are not non-analogous arts.

The argument that one of skill in the art concerned with in the Matsumoto reference would not have look to the teachings of Ryu is not persuasive. Matsumoto discloses a process for producing a stable carbonized fiber or graphitized fiber. Ryu discloses a process for producing electrodes by using a carbonized fiber or graphitized fiber wherein coke is pulverized and graphitized as claimed (See col. 3, lines 31-56). Therefore, one of skill in the art would pulverize the carbonaceous material before the graphitizing step because the pulverizing step of Ryu is effective to produce graphitized fiber to produce negative electrode.

Art Unit: 1764

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

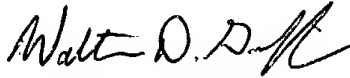
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN


Walter D. Griffin
Primary Examiner